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ROADSIDE PLANTS OF A HIGH MOUNTAIN PARK IN COLORADO

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The following is a report on a collection of roadside plants made by Professor Francis Ramaley in the summer of 1911 at the University of Colorado Mountain Laboratory at Tolland, Colorado. The laboratory is situated in Boulder Park, Gilpin Co., about forty-seven miles from Denver and eighteen miles from Boulder. The altitude of Tolland is 8,889 feet. The list is of interest as showing the roadside weeds of a rather high mountain station.*

Boulder Park is on the old Rollins Pass Road which goes from the plains across the range into Middle Park. This road has been used for the last forty or fifty years, by cattlemen, to drive cattle over into Middle Park for pasturing. Nederland and Central City, both old mining camps, eight and twelve miles away, respectively, may be reached by road from Boulder Park. Rollinsville, formerly a placer mining camp is five miles distant on the direct wagon road from the plains region, through Boulder Park, to the Continental Divide. The Moffat Railroad was built through the Park about eight years ago, thus making another means for the introduction of new plants. The soil along the roadsides is, for the most part, very dry and either sandy or rocky. Nearly all of the species here recorded occur in this dry soil. The following, however, are found in moister

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* There are only two articles which the writer has found giving information regarding the subject of roadside weeds in Colorado: European Plants Growing without Cultivation in Colorado, by Francis Ramaley, printed in *Annales du Jardin Botanique de Buitenzorg*, 1909, and Remarks on the Distribution of Plants in Colorado East of the Divide, by Francis Ramaley, reprinted from *Postelsia*, 1901.

places: *Juncus balticus montanus*, *Rumex acetosella*, *Rumex occidentalis*, *Rumex crispus*, *Rumex salicifolius*, *Anchusa officinalis*, *Prunella vulgaris*, *Iva xanthifolia* and *Festuca rubra*.

The altitudinal limits of the plants listed are given by Rydberg* as 4,000 to 13,000 feet. Some plants are found above their hitherto reported range as: *Festuca rubra*, *Bromus tectorum*, *Elymus canadensis*, *Rumex crispus*, *Chenopodium oblongifolium*, *Melilotus officinalis*, *Iva xanthifolia*, these all being reported by Rydberg as reaching altitudes of 7,000 feet or less.

Sixty-four plants are listed below; of these sixteen belong to Poaceae, six to Polygonaceae and thirteen to Compositae. Forty-two plants of the list are native to North America. Some, however, have been introduced into Boulder Park from lower altitudes and probably do not produce seeds there. Twenty-one are introduced from Europe, Asia or Tropical America. *Plantago major* (common plantain) is cosmopolitan but, of course, introduced at this altitude from lower stations.

POACEAE

Phleum pratense L. Common Timothy.

Europe.

Trisetum majus (Vasey) Rydb. Larger False Oats.

Native.

Koeleria cristata (L.) Pers. Prairie-grass.

Native.

Dactylis glomerata L. Common Orchard Grass.

Europe.

Poa pratensis L. Kentucky Blue-grass.

Europe; Asia; North America.

Poa compressa L. English Blue-grass.

Europe and Asia. Introduced to North America.

Poa serotina Ehr.

Native.

Festuca rubra L. Red Fescue.

Europe, Asia.

Bromus pumpellianus Scribn. Pumpelly's Brome.

Native.

* Rydberg, Flora of Colorado, 1906.

- Bromus tectorum* L. Thatch Cheat.
Europe.
- Agropyron violaceum* (Hornem.) Vasey. Violet Wheat Grass.
Native.
- Agropyron tenerum* Vasey. Slender Wheat Grass.
Native.
- Agropyron occidentale* Scribn. Western Wheat Grass.
Native. (Introduced from lower altitudes.)
- Hordeum jubatum* L. Squirrel-tail Grass.
Native. (Introduced from lower altitudes.)
- Hordeum sativum hexastichon* (L.) Hack. Six-rowed Barley.
Old World, thence to the New.
- Elymus canadensis* Linn. Canadian Wild Rye.
Native. (Introduced from lower altitudes.)

JUNCACEAE

- Juncus balticus montanus* Engelm. Mountain Baltic Rush.
Native.

POLYGONACEAE

- Rumex acetosella* L. Sheep Sorrel.
Europe: Asia, thence to North America.
- Rumex occidentalis* Wats. Dense-flowered Dock.
Native.
- Rumex crispus* L. Curly Dock.
Europe and Asia, thence to North America.
- Rumex salicifolius* Weinm. Willow-leaved Dock.
Native.
- Polygonum aviculare* L. Doorweed.
Asia: Europe: North America.
- Tiniaria convolvulus* (L.) Webb. & Moq. False Buckwheat.
Europe, Asia, thence to North America.

CHENOPODIACEAE

- Chenopodium oblongifolium* (S. Wats.) Rydb. Oblong Leaved
Goosefoot.
Native.

Chenopodium album L. Common Pigweed.

Europe, Asia.

Monolepis nuttalliana (R. & S.) Engelm. Nuttall's Monolepis.

Native.

PAPAVERACEAE

Capnoides aureum (Willd.) Kuntze. Golden Corydalis.

Native.

BRASSIACEAE

Lepidium ramosissimum A. Nels. Pepper Grass.

Native.

Lepidium densiflorum Schrad. Apetalous Pepper Grass.

Europe.

Bursa Bursa-pastoris (L.) Britton. Common Shepherd's Purse.

Europe, thence now cosmopolitan.

Roripa sinuata (Nutt.) A. S. Hitch. Spreading Yellow Cress.

Native. (Probably introduced from lower altitudes.)

Brassica arvensis (L.) B.S.P. Wild Mustard.

Europe.

CAPPARIDACEAE

Peritoma serrulatum (Pursh) DC. Rocky Mountain Bee Plant.

Native. (Introduced from lower altitudes. Probably does not mature seeds.)

ROSACEAE

Rubus strigosus Michx. Raspberry.

Native.

Potentilla monspeliensis L. Rough Cinquefoil.

Native.

Potentilla pennsylvanica strigosa Pursh. Villous Pennsylvania

Cinquefoil. Native.

Fragaria glauca (S. Wats.) Rydb. Glauous Strawberry.

Native.

FABACEAE

Trifolium pratense L. Red Clover.

Europe and Asia, thence cultivated and naturalized in all temperate lands.

Trifolium repens L. White Clover.

Europe.

Melilotus officinalis (L.) Lam. Yellow Melilot.

Europe and Asia, thence to North America. (Probably does not mature seeds at this altitude.)

Aragallus deflexus (Pall.) Heller. Deflexed Loco-weed.

Native.

EPILOBIACEAE

Chamaenerion angustifolium (L.) Scop. Narrow-leaved Fireweed.

Native.

Gayophytum ramossissimum T. & G. Gayophyte.

Native.

POLEMONIACEAE

Collomia linearis Nutt. Narrow-leaved Collomia.

Native.

HYDROPHYLLACEAE

Phacelia leucophylla Torr. White-leaved Phacelia.

Native.

Phacelia sericea Hook. Hairy Phacelia.

Native.

BORAGINACEAE

Lappula occidentalis (S. Wats.) Greene. Western Stickweed.

Native.

Anchusa officinalis L.

Europe.

LAMIACEAE

Dracocephalum parviflorum Nutt. Small-flowered Dragon's Head.

Native.

Prunella vulgaris L. Common Self-heal.

Europe and Asia, thence to North America, where northward it is possibly native.

PLANTAGINACEAE

Plantago major L. Common Plantain.

Cosmopolitan. (Introduced at this altitude from lower stations.)

AMBROSIACEAE

Iva xanthifolia Nutt. Burweed Marsh-elder.

Native. (Probably does not produce seeds at this altitude.)

COMPOSITAE

Grindelia erecta A. Nels. Erect Gum Plant.

Native.

Chrysopsis villosa (Pursh) Nutt. Villous Golden Aster.

Native.

Solidago concinna Nels. Golden Rod.

Native.

Aster adscendens Lindl. Ascending Aster.

Native.

Machaeranthera viscosa (Nutt.) Greene. Sticky Aster.

Native.

Achillea lanulosa Nutt. Woolly Yarrow.

Native.

Artemisia Forwoodii S. Wats. Forwood's Sage. (Segregate of *Artemisia canadensis*.)

Native.

Artemisia frigida Willd. Barrens Sage.

Native.

Artemisia rhizomata A. Nels. Cudweed Sage.

Native.

Artemisia gnaphalioides Nutt. Cudweed Sage.

Native.

Senecio rosulatus Rydb. Tufted Groundsel.

Native.

Senecio ambrosioides Rydb. Ragweedlike Groundsel.

Native.

Taraxacum Taraxacum (L.) Karst. Common Dandelion.

Europe, thence to North America.